

Clinical Activities Audit

A Useful Tool for Changing Clinicians' Practice

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Abstract

Introduction:

Continuing professional education activities such as professional conferences and passive dissemination of literature appear to have no little or no impact on changing clinicians' practice. A clinical activities audit was carried out with a group (44) of chiropractors and osteopaths as part of the Chiropractic and Osteopathic College of Australasia's continuing professional development program to determine whether it was likely to generate improvement in practice.

Methods:

The participants gathered data relating to six audit criteria on ten patient records in round 1 and ten in round 2 (six months later). Each participant received a learning guide relating to useful clinical tools for pain and disability measurement immediately after completing the first round. The audit criteria relate to: methods used to assess the site and severity of pain, methods used to assess disability, other investigations performed or ordered, referrals made and outcome measures used for pain and disability. The data were analysed to determine whether the participants increased their use of objective pain and disability and outcome measures over the course of the audit.

Results:

Results of the first round of audit were compared with those of the second round. Practitioners' use of objective measures of pain and disability and outcome measures was significantly higher in the second round of audit.

Conclusion:

This indicates that this clinical activities audit is a useful tool for improving practice.

Keywords:

Clinical audit, pain and disability measurement, chiropractic, osteopathic.

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Introduction

There is no evidence that current approaches to continuing professional education, such as professional conferences and passive dissemination of literature produce sustainable changes in clinician practices or application of current knowledge^{1,2}. A clinical activities audit which includes educational material designed for chiropractors and osteopaths was made available to members of the Chiropractic and Osteopathic College of Australasia as part of the College's continuing professional development program to determine whether an audit of this type will lead to improvement in practice.

Objectives

To demonstrate whether clinical activities audit is a useful tool for improving the practice of chiropractors and osteopaths.

To help practitioners to identify the level of care they are achieving for pain and disability measurement and outcome assessment compared with their peers, with a view to improving those levels where warranted.

Literature Review

There has been limited research into continuing professional development in the chiropractic and osteopathic literature. By contrast, there has been a great number of systematic reviews, focused mostly on continuing medical education (CME). As continuing professional development for all health care professions aims to produce changes in clinician practice and application of current knowledge, a useful parallel can be drawn between CME and continuing professional development for chiropractors and osteopaths.

The relevant research into continuing medical education falls into three main categories: research into how doctors learn, evaluation of CME interventions and research into innovation strategies used to achieve changes in specifically targeted areas of practice.

Continuing Education

An Ontario Survey of physicians³ distinguished between two types of CME activity: those in which physicians were able to participate locally, such as reading journals, texts, informal consultants, using AV materials and those of a more formal nature, often requiring travel such as scientific sessions, meetings of local medical societies, formal hospital events, etc...

Davis et al.⁴ describe this pattern as still typical ten years later, though a few newer methods (including clinical audit)

were also beginning to feature by this time. A study by Owen et al.⁵ of general practitioners in Wales demonstrated that only about half were able to respond positively when asked to identify any particular education event(s) that had changed the way they practise.

Effectiveness of CME Courses

In a review of 99 randomised controlled trials in CME Davis et al.¹ concluded that short CME events of one day or less usually bring about little change. There are a few examples of very short courses focused on simple practical skills leading to positive outcomes^{6,7}, although most reported successes are for courses longer than 1 day.

An Australian study⁸ evaluated a skin cancer training programme for GPs which involved 3 sessions of 3-4 hours. The authors conclude that changes in knowledge resulted from the CME course but were not translated into changes in practice. Carney et al.⁹ conducted a randomised control trial to assess the effects of a variety of educational techniques on the cancer control skills of 57 physicians. Techniques used included small-group discussion, role playing, videotaped clinical encounters, and lecture presentations. Performance was measured by using unannounced standardised patients with hidden microphones to visit one year after the programme. Significantly higher performance was found for the areas where the CME programme had used techniques that rehearsed or portrayed and discussed clinical activities.

Effectiveness of Other Interventions

Results for interventions using educational materials on their own are not encouraging. While Davis et al.¹ reported positive outcomes in only 4 of 10 RCTs, there are a small number of positive examples of materials affecting prescribing practices^{10,11}.

The impact of practice guidelines on medical practice has been relatively well researched. Clinical practice guidelines are systematically developed statements to assist practitioner decisions about appropriate health care for specific clinical circumstances^{12,13}. Although guidelines have been found to enhance the quality and outcomes of clinical care, the successful introduction of guidelines is dependent on many factors, including the characteristics of the guidelines¹⁴, the clinical context and the methods of development, and dissemination and implementation¹⁵. Grimshaw and Russell's review¹² found that all but 4 (out of 59) studies detected significant improvements in the process of care after the introduction of guidelines. Interestingly, 11 of the studies also assessed treatment outcomes, and 9 reported significant improvements. Davis et al.⁴ appear to have reached a different

conclusion when they state that "the evidence for their [guidelines] effectiveness on changing patient outcomes by themselves is weak" (p. 254). However, Grimshaw and Russell's¹² tables include a column headed Intervention which indicates that in almost every study the circulation of guidelines had been accompanied by concomitant activities such as reminders, feedback or conferences. It appears that when a set of guidelines is considered sufficiently important for its impact to be formally evaluated, it will almost always be accompanied by other activities.

Clinical Audit

Clinical Audit can be defined as:

"the systematic critical analysis of the quality of health care, including the procedures used for diagnosis, treatment and care, the use of resources and the resulting outcome and quality of life for patients. It embraces the work of all healthcare professionals"¹⁶.

Clinical audits typically monitor the use of particular interventions, or the care received by patients, against agreed standards. Any departures from "best practices" can then be examined in order to understand and act upon the causes. Clinical audits usually examine processes, but can also look at outcomes. The primary purpose of audit is quality assurance and improvement.

Langworthy¹⁷, in the only published study of clinical audit in chiropractic, concluded that a voluntary national audit scheme succeeded "in raising awareness and standards of clinical practice". Mugford et al.'s¹⁸ review of 36 studies of clinical audit suggest that it is most likely to affect practice when the participants have already agreed to review that practice. Cantillon and Jones's¹⁹ review of CME in general practice found 18 evaluations of audits with educational interventions, of which 17 showed a positive influence on doctor behaviour. A Cochrane review has concluded that audit and feedback may be effective in improving the practice of healthcare professionals, especially prescribing²⁰.

Methodology

A two round Pain and Disability Audit was made available to members of the Chiropractic and Osteopathic College of Australasia as part of the College's continuing professional development program. This was the first time a clinical activities audit had been included in the program.

Data Collection

Participants were asked to choose ten patient records at random. The patients must have presented with a pain-related

condition within the previous twelve months, but longer than two months ago. Forty-four participants gathered data relating to pain and disability measurement and outcome assessment on ten patient records in round 1. Data relating to referral patterns and further investigations was also gathered, however will not be included in this article.

The audit criteria relating to measurement of pain and disability and outcome measures are as follows:

1. methods used to measure pain severity

Participants were asked to specify (by circling Yes or No on an audit sheet) whether they used the following measures of assessing pain severity: patient history, McGill Pain Questionnaire, Visual Analogue Scale, Physical Examination, any others. They were also asked to specify what (if any) information regarding pain severity was gained by the assessment.

2. methods used to measure the site of pain

Participants were asked to specify (by circling Yes or No on an audit sheet) whether they used the following measures of assessing the site of pain: patient history, physical examination, pain drawing, any other. They were again asked to specify what (if any) information regarding the site of pain was gained by the assessment.

3. methods used to measure disability

Participants were asked to specify (by circling Yes or No on an audit sheet) whether they used the following measures of assessing disability: patient history, physical examination, Neck Disability Index, Roland-Morris Back Pain Scale, Oswestry Low Back Pain Index, any other. They were then asked to specify the results of the disability assessment.

4. outcome measures used

Participants were asked to state the results of any outcome measures they used. A list of common outcome measures was given along with space for the results: patient history, physical examination, McGill Pain Questionnaire, Visual Analogue Scale, Pain Drawing, Neck Disability Index, Roland-Morris Back Pain Scale, Oswestry Low Back Pain Index, any other.

Report

Once the data for round 1 was analysed, participants were sent a report comparing their results with those of the cohort. The report took the form of a brief narrative explaining their result followed by a graph for each audit criteria (see example below). This report was accompanied by a learning guide which gave details and examples of all the pain and disability assessment tools mentioned in the audit as well as some other clinically useful alternatives.

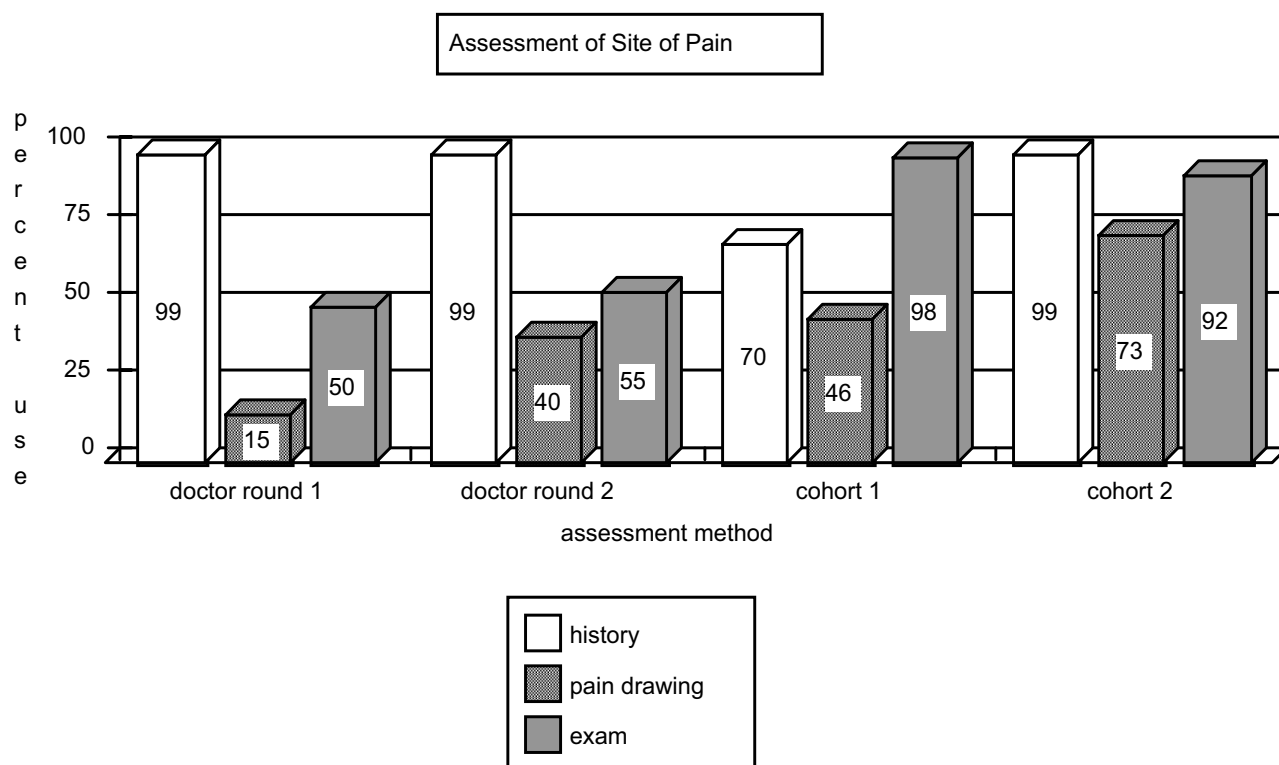


Figure 1 - example of graph which accompanied the final report to participants

A second audit round was carried out by all participants six months later. Participants were instructed to randomly select records for ten patients who had presented with a pain-related condition within the last four months, but longer than one month ago. Results of the second round were analysed and a final report was sent to participants.

Audit Participants

Of 44 participants, there were 37 males and 7 females. Thirty-seven were chiropractors, 4 were osteopaths and 3 were chiropractor/osteopaths. Of 44 participants who started the audit, 42 completed it. No data for the two who dropped out were included in these results.

Data Analysis

Quantitative Analysis

The data were examined for differences in mean scores between first and second rounds for each participant. Either a paired t-test or a Wilcoxon matched-pairs signed-ranks test was used, depending on whether the data followed a normal (Gaussian) distribution.

Results – Audit

Audit Criterion 1 - Pain Severity

The first round of audit demonstrated that participants were using the patient history and examination almost exclusively (with a minority using a visual analogue scale or numerical

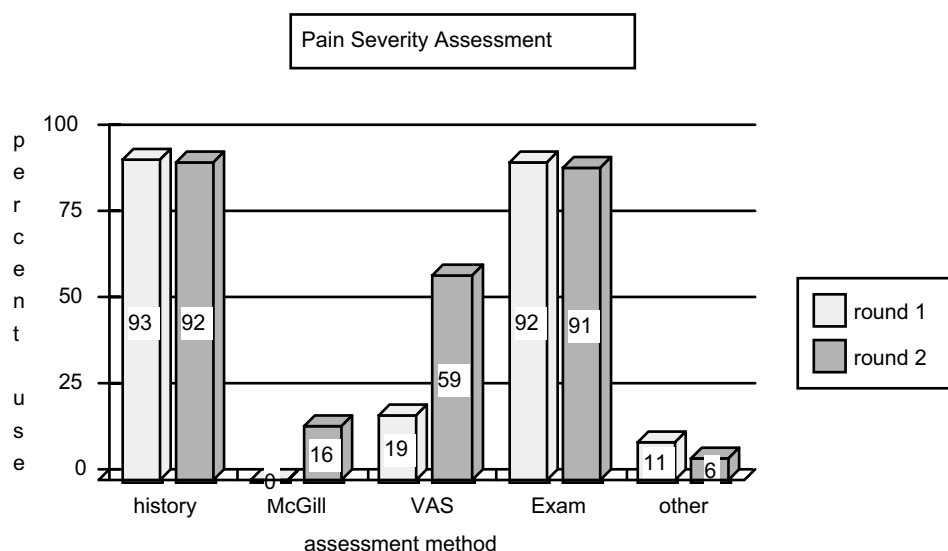


Figure 2 - percent use of cohort's assessment methods for pain severity over 2 audit rounds

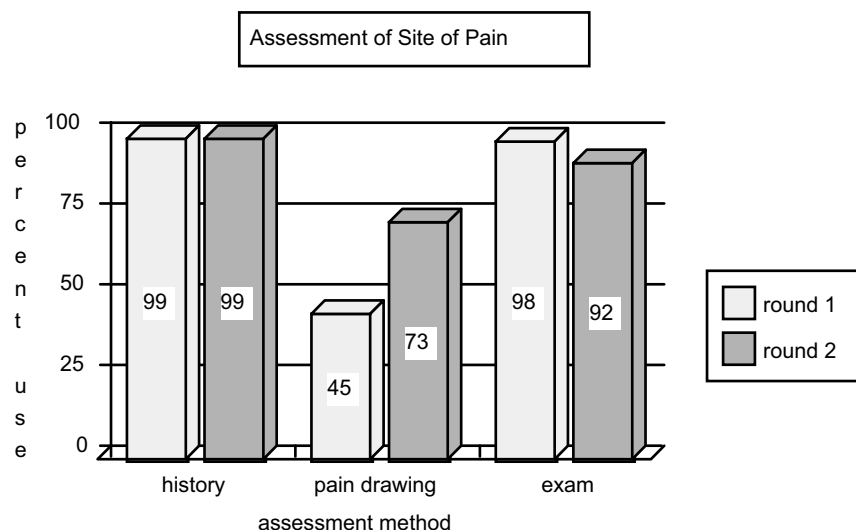


Figure 3 - percent use of cohort's assessment methods for site of pain over 2 audit rounds

rating scale) for measuring the severity of pain. By the second round, a significant increase in the use of visual analogue scales and McGill Pain Questionnaire (short form) was in evidence (see figure 2).

Audit Criterion 2 - Site of Pain

The first round showed that participants were virtually always using history and examination for determining the site of pain and used a pain drawing 45% of the time. The second round showed an increase of 62% in the use of pain drawings.

Audit Criterion 3 - Disability

There were significant increases in the use of history and functional rating scales from the first to the second round.

Audit Criterion 4 - Outcome Measures

Significant increases in the use of all outcome measures with the exception of history and examination were noted.

The following table lists those audit criteria that showed a significant increase in use from the first to the second round.

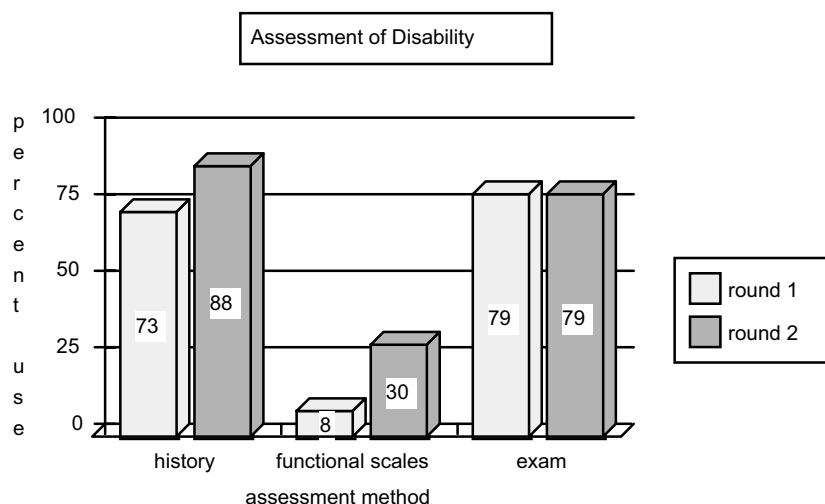


Figure 4 - percent use of cohort's assessment methods for disability over 2 audit rounds

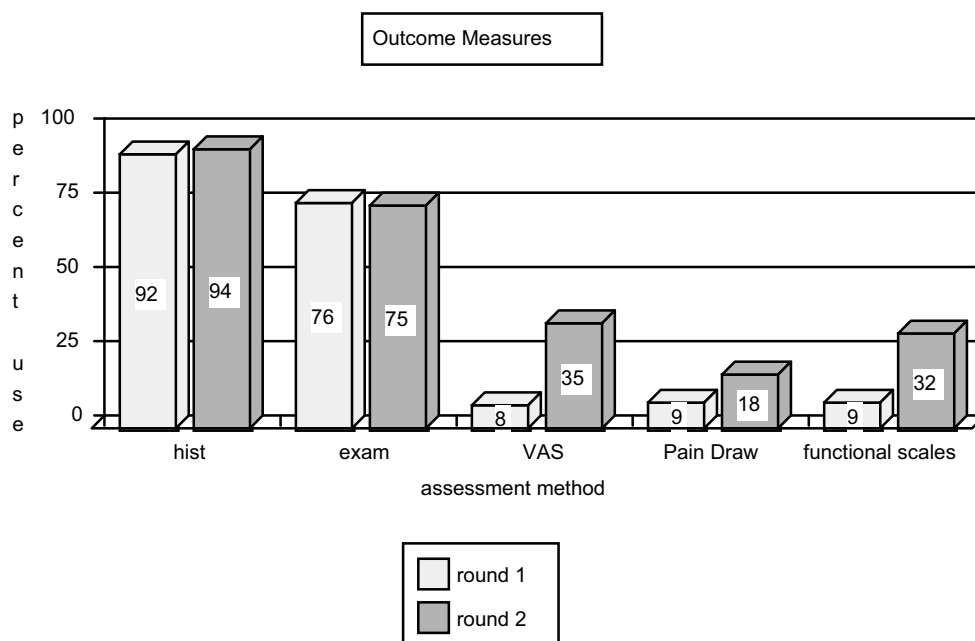


Figure 5 - percent use of cohort's assessment methods for pain severity over 2 audit rounds

Discussion

These results suggest that clinical audit may be a useful tool to improve clinical practice. An increase in the use of a number of assessment tools for pain and disability was noted from the first to the second rounds of audit. The format of the clinical audit itself was suitable as none of the practitioners had difficulty with the data collection forms or with seeing the requisite number of patients within the allotted timeframe.

The design of this clinical audit varies somewhat from many of the others reported in the literature. Standards are typically an integral part of audit. However, as national standards for pain and disability assessment have not been investigated or set, this audit does not specify a standard for each criterion. Standards need to be attained incrementally, bearing in mind current local practice and what can be done practically. However, improved standards should be a continuing process.

The methods for measuring pain and disability specified in the audit were chosen for their clinical utility and popularity both in clinical and research settings. Participants were given the opportunity to list 'other methods' they used, however only a small minority (3) did so.

A retrospective group of patients was used in this study instead of a control group because "there is a danger that treatment offered to the control patients will be contaminated by doctors' knowledge of the guidelines"¹²(p. 1317). A retrospective group is therefore more useful than a control in a comparison of changes in practice in individual practitioners.

There may be some suspicion regarding the honesty of practitioners' responses on the data collection forms. This is probably unwarranted as there is no advantage to be gained by giving false information. The audit was carried out on a confidential basis and there was no 'pass or fail' nor any grading system other than 'complete' or 'incomplete'. In a small study by Langworthy¹⁷, where investigators were permitted access to practitioners' files to extract information, their results were similar to those where practitioners filled out the data collections forms themselves.

There may be some question as to whether 10 patients in each audit cycle are sufficient to ensure representativeness. Consideration was given to the number of patients required for the audit in terms of striking a balance between this and the practicalities of time. The audit process should leave time for practitioner education by encouraging reference to the learning guide's recommendations, context and supporting evidence.

Ethical Issues

Clinical audit by definition does not involve anything being done to patients beyond their normal clinical management and therefore does not require formal ethical approval. However, clinical audit must always be conducted within an ethical framework. At a practical level, this means ensuring patient confidentiality at all times. In this audit, patient confidentiality was ensured by identifying them with initials only. Practitioner names will not be used in any publications and the data collection sheets with the practitioners' name were destroyed once their confidential report was sent and acknowledged.

Audit Criteria	Round 1 (mean score)	Round 2 (mean score)	Significance P value
Pain Severity			
McGill	0	16	0.0078
VAS	19	59	<0.0001*
Site of Pain			
Pain Drawing	45	73	0.0003*
Disability			
History	73	88	0.0006
Functional Scales	8	30	<0.0001
Outcome Measures			
VAS	9	35	0.0002
Pain Drawing	9	18	0.0391
Functional Scales	9	32	0.0137

Table 1 - Audit criteria demonstrating a significant increase in use over 2 rounds of clinical audit (Where P values are marked with an asterisk (*) a paired-t test was carried out. Where P values are unmarked, a Wilcoxon matched-pairs signed-ranks test was carried out as the data did not follow a normal distribution.)

Conclusion

Results of this clinical audit are encouraging. A clinical activities audit of the type described in this paper appears to be a useful educational tool for increasing practitioner use of objective tools for assessment of pain and disability and outcome measures. The ultimate goal is of course improved patient outcomes and research needs to be carried out to investigate whether this is indeed occurring. It would be useful to carry out a third round of audit in twelve months or more to determine whether the changes made in practice have continued.

Voluntary quality assurance administered in the way described above has been found to be operationally viable for the chiropractic and osteopathic professions in the United Kingdom¹⁷, and could be important for the professions in Australia and New Zealand as well. In addition to informing practitioners of their own clinical standards in a non-threatening way, this form of quality assurance has the potential to provide powerful evidence of professional competence.

Summary of important points

There is no evidence that current approaches to continuing professional education, such as professional conferences and passive dissemination of literature produce sustainable changes in clinician practices or application of current knowledge.

By contrast, of 18 evaluations of audits with educational interventions in the literature, 17 showed a positive influence on doctor behaviour.

In this study, a clinical activities audit involving a systematic analysis of practitioner's use of pain and disability assessment tools was combined with an educational intervention in the form of a learning guide.

A clinical activities audit of the type described in this paper appears to be a useful educational tool for increasing practitioner use of objective tools for assessment of pain and disability and outcome measures.

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